

Application No. 10/666,171

Docket No.: 65858-0024

REMARKS

Claims 1 - 21 are pending. Claims 1 and 8 are independent claims. The undersigned thank Examiner Silver and Examiner Jones for the courtesy of a personal interview concerning the office action.

In the Office Action, Claims 2-4 and 19-20 were objected to under 37 CFR 1.75(c) for allegedly being in improper dependent form. Claims 1, 2, 5, 6 and 7 were objected to because they used the phrase "comprising the step". Further, claim 6 was rejected under 35 U.S.C. § 112, first paragraph, for allegedly "failing to comply with the enablement requirement." Claims 2-4 and 18-20 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly "being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention." Claims 1-2, 4, 7, 8 and 21 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by ME176 Final Exam ("Berkeley"). Claims 3 and 6 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Berkeley. Claims 5 and 9-16 were rejected as allegedly unpatentable over Berkeley in view of Strand et al. (U.S. 5,373,749). Claims 16-17 were rejected as allegedly unpatentable over Berkeley in view of Sterler et al. (U.S. 4,985,835)¹. Claims 18-19 were rejected as allegedly unpatentable in view of Strand et al. and in further view of Nagle et al. (U.S. 5,335,190).

Claims 1-2, 5-8, 10, and 18-19 have been amended. By way of the amendments, no new matter has been added. Accordingly, claims 1-21 remain pending in this application. At least for the reasons set forth below, Applicant respectfully traverses the foregoing rejections. Further, Applicant believes that there are also reasons other than those set forth below why the pending claims are patentable, and reserves the right to set forth those reasons, and to argue for the patentability of claims not explicitly addressed herein, in future papers. Applicants respectfully request reconsideration of the present application in view of the above amendment, the new claims, and the following remarks.

Application No. 10/666,171

Docket No.: 65858-0024

Specification1. Abstract

The Examiner objected to the abstract since it repeats information in the title. The abstract has been amended to address the Examiner's observations. Further, the title itself has been updated.

2. Construing of Claims

The Examiner cites from a portion of MPEP 2111.01 to indicate that the claims will be interpreted to their broadest reasonable meaning as defined in the specification, apparently objecting to the language in the specification that "the scope of the appended claims should be construed as broadly as the prior art will permit."

It is respectfully submitted that the Examiner is using the wrong standard and instead should be looking at MPEP 2111. The cited section relates to "Plain Meaning" and not to the doctrine of claim interpretation; broadest reasonable interpretation. The pertinent section states as follows:

A. 2111 Claim Interpretation; Broadest Reasonable Interpretation [R-1]

a. CLAIMS MUST BE GIVEN THEIR BROADEST REASONABLE INTERPRETATION

During patent examination, the pending claims must be "given *their* broadest reasonable interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000).< Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969) (Claim 9 was directed to a process of analyzing data generated by mass spectrographic analysis of a gas. The process comprised selecting the data to be analyzed by subjecting the data to a mathematical manipulation. The examiner made rejections under 35 U.S.C. 101 and 102. In the 35 U.S.C. 102 rejection, the examiner explained that the claim was anticipated by a mental process augmented by pencil and paper markings. The court agreed that the claim was not limited to using a machine to carry out the process since the claim did not explicitly set forth the machine. The court explained that "reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from 'reading limitations of the specification into a claim,' to thereby narrow the scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim." The court found that applicant was advocating the latter, i.e., the impermissible importation of subject matter from the specification into the

¹ The Office Action (Office Action, page 8) apparently erroneously stated that claims 16-17 were rejected in light of Strand. This statement appears to have been inadvertent, inasmuch as the Office Action then proceeds to reference Sterler.

Application No. 10/666,171

Docket No.: 65858-0024

claim.). See also *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997) (The court held that the PTO is not required, in the course of prosecution, to interpret claims in applications in the same manner as a court would interpret claims in an infringement suit. Rather, the "PTO applies to verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in applicant's specification.").

The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999) (The Board's construction of the claim limitation "restore hair growth" as requiring the hair to be returned to its original state was held to be an ** >incorrect< interpretation of the limitation. The court held that, consistent with applicant's disclosure and the disclosure of three patents from analogous arts using the same phrase to require only some increase in hair growth, one of ordinary skill would construe "restore hair growth" to mean that the claimed method increases the amount of hair grown on the scalp, but does not necessarily produce a full head of hair.).

Moreover, the cited MPEP section notes that the claims may be interpreted in a different manner by the PTO than a court would interpret claims in an infringement suit. The standard set forth in the application by Applicant is appropriate, particularly in the context of litigation.

Claim Interpretation

Applicant utterly disagrees with the Examiner's attempt to interpret the claims in a manner not permitted by law, statute or the rules of the office, and note that the attempted recasting of the claim language is merely undertaken to facilitate the attempted application of the cited prior art. Merely by way of example, Applicant states as follow:

1. Displacement

The Examiner points to specification paragraphs 3, 4, and "the displacement formula" in paragraph 17 for the alleged definition of "the difference between a new location and an old location". The language of the specification speaks for itself. Significantly, the two paragraphs cited by the Examiner relates to the Background of the Invention although Applicant acknowledges that paragraph [0004] does use the term "forward displacement" in the context of the system and method discussed.

Application No. 10/666,171

Docket No.: 65858-0024

2. Tangential Velocity

The Examiner suggests that the claimed invention is directed toward a simplified calculation of tangential velocity of a point on a rod, which rotates about a pivoting point. Tangential velocity is nowhere mentioned in the specification. Nor is the word velocity used in any of the independent claims. In fact, the word velocity is only mentioned in dependent claims 7 and 21 of the application as filed.

Claim Objections

1. Limiting Dependent Claims

The Examiner suggests that limitations in claims 2-4 and 19-20 are not further limiting and that this affects both claim interpretation and renders the claims objectionable under 37 CFR 1.75(c). Applicant disagrees. The objected to claims provide additional detail concerning the test dummy and its various components. The claims include features not found within the respective parent claims. For example, an outermost point is recited in dependent claims 2 and 19 as the point of the test dummy most likely to first make contact with an object or defined region of space lying in front of the test dummy. In claim 3 the outermost point is the nose and in claim 4, an offset is recited, indicating that there is a distinction between the third point and the outermost point. In claims 4 and 20 the two points may not be the same point on the test dummy. It is a mischaracterization by the Examiner to state that the only recitations in these claims is that "the distance traveled by the 'core' of the dummy head and the "outermost" point results in the same result. Tellingly, the term "outermost" does not exist until recited in claims 2 and 19, which amply supports the fact that additional terminology is being introduced that further limits the claims. Moreover, for dependent claims 19 and 20, these claims are system claims as opposed to method claims so the concern with respect to "same result" is even more misplaced.

2. Comprising the step

Application No. 10/666,171

Docket No.: 65858-0024

The Examiner objected to claims 1, 2, 5, 6, and 7 as using the phrase "comprising the step" and that the phrase should be "comprising a step". No support is provided for the requested change. Further, claim 1 is in the plural. Nevertheless, to facilitate prosecution, the requested changes have been made to the dependent claims and a similar amendment made to independent claim 1. The scope of the claims is not restricted by the amendments made.

Claim Rejections – 35 USC § 112

1. Claim 6

Claim 6 was rejected as failing to comply with the enablement requirement. During the interview the claim recitations and their relationship to the specification was discussed. It is believed that the Examiner now has a better understanding of the intent of the claim. On the other hand, the undersigned has a better appreciation of the Examiner's initial confusion. Thus, claim 6 has been amended as discussed during the interview to more clearly articulate the interaction between the fixed frame of reference, the tether and the first point on the test dummy. More specifically, any further forward displacement of the first point with respect to the fixed frame of reference is prevented when the tether is fully extended as shown in Figure 4 as compared to Figure 3.

2. Claims 2-4 and 19-20

The Examiner has rejected claims 2-4 and 19-20 as failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention. Pursuant to the interview, claims 2 and 19 have been amended to remove the phrase "most likely" and to clarify that it is the outermost point in the context of the claims that that first makes contact with an object or defined region of space lying in front of said test dummy.

3. Claim 18

Application No. 10/666,171

Docket No.: 65858-0024

Claim 18 has been amended to recite “an inclinometer mounted at said second point.” This amendment is believed to clarify the meaning of claim 18 and to address the issue of “nearby” raised by the Examiner.

Claim Rejections – 35 USC § 102

Claims 1-2, 4, 7, 8 and 21 are rejected as allegedly anticipated by Berkeley. However, Berkeley fails to teach certain limitations of claims 1-2, 4, 7, 8 and 21, and therefore the rejection of these claims under Section 102 should be withdrawn.

Berkeley discusses a system in which “a seatbelt is used but without shoulder strap.” (*See page 1, problem 2.*) The upper torso and head act as a rigid body consisting of a uniform slender rod of mass m and length L (*see page 1, problem 2*). The slender rod rotates around the hip point at an angle θ (*illustrated in Figure 2, page 2*). Accordingly, Berkeley teaches at most two fixed points in relation to the uniform slender mass.

1. Independent Claims 1 and 8

Independent claim 1, as amended, recites in part:

securing a test dummy at a first point that is both fixed with respect to said test dummy and fixed with respect to a fixed frame of reference, said first point selectively acting as a pivot point for said test dummy;

applying a linear force to a second point that is fixed with respect to said test dummy and offset from said first point, said second point moving solely in a forward direction with respect to said fixed frame of reference upon application of said linear force, said linear force causing a measurable amount of forward-directed displacement of said second point with respect to said fixed frame of reference while causing said test dummy to pivot about said first point;

Application No. 10/666,171

Docket No.: 65858-0024

establishing a third point that is fixed with respect to said test dummy and offset from said first point and said second point, said third point undergoing an amount of forward-directed displacement with respect to said fixed frame of reference due to said pivoting of said test dummy; and

estimating an amount of said forward-directed displacement occurring at said third point by multiplying said measurable amount of forward-directed displacement occurring at said second point by a ratio AD/AB , where AD represents a distance between said first point and said third point and where AB represents a distance between said first point and said second point.

(Emphasis added).

As explained in detail below, Berkeley does not teach at least the recited claim 1 elements of (i) "a third point that is fixed with respect to said test dummy and offset from said first point and said second point", (ii) "estimating an amount of said forward-directed displacement occurring at said third point", and (iii) , the second point moving solely in a forward direction with respect to said fixed frame of reference upon application of the linear force, Independent claim 8 includes similar recitations as well. Therefore, because Berkeley does not teach each and every element of independent claim 1 and 8 these claims are in condition for allowance.

A. "a third point that is fixed with respect to said test dummy and offset from said first point and said second point"

The Examiner asserted that a fixed second point is taught by Berkeley in Fig. 2 as velocity, v and a third point as the head (*see Office Action, page 5*). However, Fig. 2 does not show a third fixed point that is defined on the test dummy; the velocity v is not a point defined on the test dummy, it is merely showing the direction of the velocity. Furthermore, the force from the impact of the crash is not being applied at any point to the test dummy. Therefore, Berkeley does not teach, or even suggest that there is a system where there are three fixed points, or even a second point where linear force is applied, as recited in independent claims 1 and 8.

B. "estimating an amount of said forward-directed displacement occurring at said third point"

Application No. 10/666,171

Docket No.: 65858-0024

Berkeley teaches the calculation of the horizontal and tangential velocities of the center of mass, angular velocity, and tangential velocity (*see Page 2, parts i and ii*). In addition, Berkeley only teaches taking into account “only appreciable forces acting on the head/torso complex are those measured at the hip, *i.e.* neglect gravity and any muscle forces.” (*See Office Action, page 2.*) However, in the claimed invention, the method will inherently account for any forces such as gravity or losses such as air resistance. Therefore, Berkeley does not teach, or even suggest that there is a system where the amount of forward-directed displacement be calculated as recited by Applicant in independent claim 1. Furthermore, Berkeley teaches that forces such as gravity should not be taken into account. As independent claim 8 recites, in part “said forward displacement of said third point being estimated,” the pending rejection of claim 8 should be withdrawn as well.

Thus, as the Examiner rejects claims 2 and 7 in light of claim 1, and claim 21 in light of 8, the pending rejection of claims 1-2, 7-8 and 21 should be withdrawn.

C. The second point moving solely in a forward direction with respect to said fixed frame of reference upon application of said linear force

While it is respectfully submitted that claims 1 and 8 are patentably distinguishable even without amendment, the two claims have been amended to more clearly articulate that the second point moves solely in a forward direction with respect to the fixed frame of reference upon application of the linear force. This relationship between the fixed frame of reference and the second point is significant because it eliminates the need to do the types of calculations the Examiner suggests are required in Berkeley. In fact, Berkeley teaches away from the claimed invention. As shown in Figure 2 of the reference, the point identified as “Hip” is fixed against any movement in the forward direction, and only able to rotate. On the other hand, the opposite point identified as “head” has elements of both rotational and directional movement in the horizontal and vertical directions as shown in the right most illustration of the bar.

In internal discussions that the undersigned has had subsequent to the interview, strong exception has been taken to the suggestion that the claimed invention recites “tangential velocity” as

Application No. 10/666,171

Docket No.: 65858-0024

discussed above. The concept of tangential velocity requires the consideration of linear velocity of a point on a rotating rigid object at a distance r from the axis of rotation. Through the interaction of the second point with the fixed frame of reference, there is no axis of rotation whatsoever for the second point. Instead, measurements are solely taken with respect to movement along the horizontal axis, something neither taught nor suggested in Berkeley. As a result, independent claims 1 and 8 are patentably distinct.

2. Dependent Claims

Dependent claims 2, 4, 7, 8 and 21 are patentable by virtue of being dependent on an allowable independent claim. However, the claims are independently patentable. For example, there is absolutely no teaching in Berkeley of having an outermost point that is distinct from the third, second and first points. On the contrary, Berkeley only recites the presence of a uniform slender rod. Nor is there any teaching of using an offset as recited in claim 4. With respect to claim 7, velocity of the vehicle itself is given before a collision takes place. There is absolutely no teaching or suggestion of calculating a velocity by measuring an amount of time that the test dummy was subject to application of the force and estimating a velocity of the test dummy by dividing the estimated amount of forward-directed displacement by the measured amount of time. Note further, that the displacement that is used is the one calculated and not the one measured with respect to the second point. Berkeley teaches away from such a calculation by giving velocity as a known quantity and lacking the ability to determine the required inputs set forth in the claim. Similar arguments are applicable to claim 21.

Claim Rejections § 103

The remarks presented above with respect to the §102 rejection are equally applicable here. Specifically, the inadequacy of Berkeley to teach every element of independent claims 1 and 8 by not teaching a seat belt system with three points is also fatal to the Examiner's §103 rejection.

Application No. 10/666,171

Docket No.: 65858-0024

1. The Law

In making a Section 103 rejection, the Examiner has the burden of stating a *prima facie* case of obviousness. It is well settled that

[t]o establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

MPEP § 2143. Further, “[t]he teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Appellant’s disclosure.” *Id.* (citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)). Here, the Examiner has failed to show that the cited references teach or suggest all of Applicant’s claim limitations, much less that one of ordinary skill in the art would have been motivated to combine the cited references would have reasonable expected success in attempting to combine the references.

When rejecting a claim based upon a sole 35 U.S.C. 103(a) reference, the Federal Circuit has provided some guidance. Specifically, *In re Gordon* provides that “[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.” 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). In addition, the Federal Circuit has held that “[i]t is not pertinent whether the prior art device possesses the functional characteristics of the claimed invention if the reference does not describe or suggest its structure.” *In re Mills*, 16 USPQ2d 1430, 1433 (1990).

If the proposed modification makes the prior art reference wholly unsuitable for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). If the proposed modification or combination of references would change the principle of operation of the prior art

Application No. 10/666,171

Docket No.: 65858-0024

invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

2. Official Notice

In addition to the above arguments, with respect to the Examiner's taking of Official Notice of claims 3 and 6, Applicant hereby seasonably challenges the Official Notice taken by the Examiner. See 37 CFR 1.104(d)(2) and MPEP § 2144.03. Therefore, the Examiner is required to produce documentary proof as evidence of the Official Notice in response to this communication. In the event that the Examiner does not produce documentary proof, it is respectfully suggested that the rejection should be withdrawn for at least this reason.

3. Dependent Claim 3

The Examiner rejects dependent claim 3 as being unpatentable over Berkeley. The remarks presented above with respect to the §102 rejection are equally applicable here. Specifically, the inadequacy of Berkeley to teach every element of independent claim 1 by not teaching a three point seat belt system, or to calculate the amount of forward-directed displacement is also fatal to the Examiner's §103 rejection, and, thus, does not meet the burden required by In re Mills

Berkeley models a simplified test dummy using a slender rod with mass of m and length of L , and contains no teaching or suggestion to "model [the test dummy] in such a way that resembles the most realistic and common occurring condition," as asserted by the Examiner (*see Office Action, page 6*). Indeed, this statement by the Examiner is insufficient to demonstrate that one of ordinary skill would have had a reasonable expectation of success in attempting to combine the teaching of Berkeley with an outermost point as a nose. Therefore, Berkeley is incapable of combination to meet the limitations of claim 3, and cannot be used to reject claim 3 for this reason alone.

Further, assuming *arguendo* that Berkeley teaches a three point seat belt system, Berkeley contains no teaching that would have motivated one of ordinary skill in the art to modify Berkeley

Application No. 10/666,171

Docket No.: 65858-0024

with "said outermost point of said test dummy is a nose of said test dummy," as required by claim 3. The Examiner acknowledges that Berkeley does not explicitly teach that the outermost test point of said test dummy is a nose, but asserted it would have been obvious to one of ordinary skill in the art that the outermost point of the test dummy is a nose (*see Office Action, page 6*). However, as Berkeley does not "suggest the desirability" of making the outermost point a nose; Berkeley does not meet the burden required by In re Gordon.

4. Dependent Claim 6

The Examiner rejected claim 6 over Berkeley in light of Sterler et al. (U.S. 4,985,835). Claim 6, a dependent claim, is patentable because claim 1 is patentable. Moreover, in view of the clarifying amendments made to claim 6 as noted above, it is believed that the rejection has been addressed on the merits independent of the patentability of claim 1.

To the extent that the rejection is still considered applicable, Berkeley does not suggest that a flexible device be used to simulate slack and flexibility in a seatbelt. Significantly, moreover, the Examiner's own comments confirm the patentability of the claim. The Examiner acknowledges that in Berkeley the "seatbelt creates a static pivot point about the hips which are effectively fixed to the point of reference." (Page 7). However, the first point is NOT a static pivot point. The fully extended tether merely limits any further forward movement. There is no limitation on the up or down movement of the first point as it pivots. In fact, if the first point were statically fixed so that it could only pivot, the entire system would bind because of the limitations placed on the movement of the second point as discussed in detail above. Under the Examiner's interpretation both the first and second points would be limited from both horizontal and vertical movement.

Sterler in no way compensates for the additional deficiencies of Berkeley, as Sterler only suggests that a "microcomputer 100, can be used to indicate whether the driver and/or front seat passenger have fastened their seat belt," (*see column 5, lines 12-14*) and does not account for slack or flexibility in the seat belt.

Application No. 10/666,171

Docket No.: 65858-0024

Because Sterler only teaches that a microcomputer can be used to indicate if a driver or front seat passenger has fastened their seat belts, one of ordinary skill in the art would have not reasonably expected success in attempting to combine Berkeley with Sterler. In fact, Berkeley and Sterler are incapable of combination, as Sterler only teaches a microcomputer 100 can be used to indicate whether a seat belt is fastened (see column 5, lines 12-14) while Berkeley teaches a crash test dummy model (see page one, problem 2). The Examiner has provided no explanation of how Berkeley's crash test dummy model could be combined with Sterler's microcomputer. Moreover, it is clear that Berkeley could not be modified with Sterler's microcomputer, as in Berkeley, "a seatbelt is used but without the shoulder strap," (see page 1, problem 2) whereas Sterler teaches that seat belt inputs may be used (see column 5, lines 16-21).

The Examiner acknowledges that Berkeley does not explicitly teach the restraint system by means of a flexible tether, but asserts it would have been obvious to one of ordinary skill in the art to include the features in order to more realistically simulate the restraining system (see *Office Action*, page 7). However, even assuming that Berkeley and Sterler taught the independent claim 1 limitations discussed above, which it does not, neither reference contains a motivation for one of ordinary skill in the art to have combined the Berkeley with the teachings of Sterler. Furthermore, the alleged motivation to combine Berkeley with Sterler would render Berkeley 'wholly unsuitable for its intended purpose'. As discussed above, Berkeley teaches that a seatbelt must be used to restrain the hip point, while Sterler teaches that seatbelt inputs may be used, if desired. Therefore, the Examiner has failed to establish a *prima facie* case for the combination Berkeley and Sterler, as required in In re Gordon.

5. Dependent Claims 5, 9-15

Dependent claims 5 and 9-15 were rejected as being unpatentable over Berkeley, and further in light of Strand et al. (U.S. 5,373,749). The claims are patentable for the reasons noted above with respect to claims 1 and 8.

Application No. 10/666,171

Docket No.: 65858-0024

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). As stated in *Akzo N.V. v. United States Int'l Trade Comm'n*, 1 USPQ 2d 1241 (Fed. Cir. 1986), prior art references must be read as a whole.

Strand's tester is used "for applying force loads to a back portion of a vehicle seat and measuring deflection thereof," (see column 1, lines 7-9). To be clear, Strand teaches that the head restraint moves in a backwards direction, away from the dashboard. Indeed, Strand teaches away from a tester used to measure forward-directed displacement. Therefore, one ordinary of skill in the art would not combine the teachings of Berkeley with the prior art of Strand, as Strand teaches that the tester exerts force on the lower portion of the seat, and not for forward-directed displacement. Thus, the pending rejection of claims 5 and 9-15 should be withdrawn for this reason alone.

A. Claim 5

Claim 5 has been amended in a manner similar to that in claim 6, including the clarification that it is only the further forward displacement that is restricted with respect to the rigid member. The comments concerning the problem of binding discussed with respect to claim 6, above, are equally applicable to claim 5. To the extent that the Examiner relies on element 28 in Strand, it is prohibited from movement in any direction as well as from rotation at one end. Thus, Strand teaches away from the claim recitation.

B. Claim 10

Claim 10 has been amended to recite that the drive guide is solely capable of being linearly displaced along the support guide in both a forwards and backwards direction. It is respectfully submitted that there is no teaching in the context of the claims in the cited prior art of record.

C. Claim 11

Application No. 10/666,171

Docket No.: 65858-0024

The Examiner conceded that Berkeley fails to teach “a support brace affixed to said test dummy and connecting said test dummy to said drive guide,” as recited, in part, by dependent claim 11 but alleges Strand compensates for these deficiencies in Figs. 1, 2, 3, and 4, item 23 (*see Office Action, page 7*). Item 23 is a longitudinally threaded shaft, that “connects the support column 18 to the hydraulic motor 21 and controls displacement,” where the mechanism “allows the tester 10 to be positioned properly in front of seat 11,” (*see column 2, lines 29-32*). However, Strand does not teach or even suggest to have longitudinally threaded shaft 23, or any other element on the tester act as a support brace to connect a “test dummy” to a drive guide.

As discussed above, Strand’s head restraint tester has nothing to do with a seat belt displacement system and, thus one of ordinary skill in the art would have not reasonably expected success in attempting to combine Berkeley with Strand. Furthermore, the alleged motivation to combine Berkeley with Strand would render Berkeley ‘wholly unsuitable for its intended purpose,’ as Strand fails to teach a test dummy where “the head hits the dashboard.” Accordingly, Strand does not teach the limitation of a “support brace affixed to said test dummy and connecting said test dummy to said drive guide” as recited by claim 11.

D. Claim 12

The Examiner conceded that Berkeley fails to teach “first and second points are located on the support brace, and said third point is on said test dummy,” as recited in claim 12, but asserted items 42, 28 and 11 in Figs. 1, 2, 3 and 4 of Strand compensate for the deficiencies (*see Office Action, page 8, item 17*). The inadequacy of Berkeley to teach every element of independent claim 1 by not teaching a three point seat belt system is also fatal to the Examiner’s §103 rejection. Strand in no way compensates for the additional deficiencies of Berkeley, as Strand only suggests that item 42 is a head restraint member that applies forces to seat 11 (*see column 2, lines 47-51*). Item 28 is a common pivot axis where the “backpan 32 and the head restraint force member 42 are connected together to form a hinge 26, wherein each member moves independently around a common pivot axis 28,” (*see column 2, lines 53-55*). Head restraint 42 does not teach a third point

Application No. 10/666,171

Docket No.: 65858-0024

on a test dummy, and pivot axis 28 and vehicle seat 11 do not teach a support brace with a first and second point.

As discussed above, Strand's head restraint tester has nothing to do with a seat belt displacement system and, thus, one of ordinary skill in the art would have not reasonably expected success in attempting to combine Berkeley with Strand. Furthermore, the alleged motivation to combine Berkeley with Strand is in fact inadequate for one of ordinary skill to have combined Berkeley and Strand. The Examiner's reasoning essentially follows the logic that: Berkeley teaches "X;" "X" is possible; therefore it would have been obvious to modify Berkeley with "X." Because the Examiner provided no statement, much less support in the prior art of record, for the proposition that one of ordinary skill in the art would have found it not only possible, but desirable, to have modified Berkeley with Strand, the Examiner failed to state a *prima facie* case of obviousness regarding claim 12.

Accordingly, Strand does not teach the limitation of the "first and second points are located on the support brace, and said third point is on said test dummy," as recited by claim 12.

E. Claim 14

The Examiner conceded that Berkeley fails to teach "a restraining system that fixes said first point with respect to said support guide," as recited, in part, by dependent claim 14 but that items 31, 29, 20A and 22 in Figs. 1, 2, 3 and 4 of Strand compensate for these deficiencies (*see Office Action, page 8, item 17*). Item 20A is the back face of a moveable plate 20 (*see column 2, lines 33 - 34*). "A vertical threaded shaft 31 connected to the worm gear drive 27 and the plate 20 through a threaded bracket 29 selectively drives the plate 20," (*see column 2, 37-39*), and a force applying mechanism "is joined to the moveable plate 20 with support arms 22" (*see column 2, lines 41-42*). However, none of these items as taught by Strand teach or even suggest fixing a "first point with respect to said support guide." Instead, the placement of plate 20 controls the vertical placement of the force applying mechanism 33 in front of face 12 (*see column 2, 43-46*).

Application No. 10/666,171

Docket No.: 65858-0024

As clear from the prior discussion, Strand's head restraint tester has nothing to do with a seat belt displacement system and, thus, one of ordinary skill in the art would have not reasonably expected success in attempting to combine Berkeley with Strand. Furthermore, as mentioned in the discussion above, the alleged motivation to combine Berkeley with Strand is in fact inadequate for one of ordinary skill to have combined Berkeley and Strand. Accordingly, Strand does not teach the limitation of "a restraining system that fixes said first point with respect to said support guide" as recited by claim 14.

6. Dependent Claims 16 and 17

Applicant's request for support of Official Notice above regarding claims 3 and 6 is repeated with respect to the Official Notice taken with respect to claims 16 and 17. Further, Applicant disagrees with the Examiner's assertion that one of ordinary skill in the art would have been motivated to modify Berkeley to meet the limitations of claim 16 "to include the said features in order to more realistically simulate the restraint system of actual seat belts." (*See Office Action, page 9*).

Examiner rejects claims 16 and 17 as being unpatentable over Berkeley, and further in light of Sterler et al. (U.S. 4,985,835)². The Examiner conceded that Berkeley fails to teach the limitation as recited in dependent claim 16 of "wherein said restraining system comprises a flexible, inelastic tether, with one end of said tether attaching to said support guide while an opposite end of said tether attaches to said first point, said tether restricting forward-directed displacement of said first point with respect to said fixed frame of reference," but contended that it would have been obvious to one of ordinary skill in the art to include "said features in order to more realistically simulate the restraint system of actual seat belts," (*see Office Action, page 9, item 18*). Specifically, the inadequacy of Berkeley to teach every element of independent claim 8 by not teaching a three

² The Office Action (Office Action, page 8) apparently erroneously stated that claims 16-17 were rejected in light of Strand. This statement appears to have been inadvertent, inasmuch as the Office Action then proceeds to reference the Sterler patent. The Office Action also states that claims 16-17 are rejected, but then references claim 6. This statement also appears to have been inadvertent, as Examiner references claim 16.

Application No. 10/666,171

Docket No.: 65858-0024

point seat belt system is also fatal to the Examiner's §103 rejection. The additional reference of Sterler that the Examiner cites is improper, as the reference only refers to adjusted values if the seat belts are being used or not, and does not account for slack or flexibility in the seat belt (*see column 5, lines 17-21*) and, thus, does not meet the burden as required by In re Mills.

A. Claim 16

As discussed above, because Sterler only teaches that a microcomputer can be used to indicate if a driver or front seat passenger has fastened their seat belts, one of ordinary skill in the art would have not reasonably expected success in attempting to combine Berkeley with Sterler. In addition, even assuming that Berkeley and Sterler taught the claim 16 limitations discussed above, which it does not, neither reference contains a motivation for one of ordinary skill in the art to have combined the Berkeley with the teachings of Sterler. The alleged motivation to combine Berkeley with Sterler would render Berkeley 'wholly unsuitable for its intended purpose'. As discussed above, Berkeley teaches that a seatbelt must be used in order to restrain the hip point, while Sterler teaches that seatbelt inputs may be used, if desired. Therefore, the Examiner has failed to establish a *prima facie* case for the combination Berkeley and Sterler, as required in In re Gordon.

B. Claim 17

The Examiner asserts that Berkeley does not teach the limitations of claim 17, but that "said estimation of said forward displacement occurring at said third point is established with respect to a starting position of said test dummy, said starting position corresponding to a state of said system where any forward displacement at said second point results in said test dummy beginning to tilt about said first point" is inherent in Berkeley's system (*see Office Action, page 9*). The remarks presented above with respect to the §102 rejection are equally applicable here. Specifically, the inadequacy of Berkeley to teach every element of independent claim 8 by not teaching a three point seat belt system is also fatal to the Examiner's §103 rejection. Berkeley does not suggest a third

Application No. 10/666,171

Docket No.: 65858-0024

point to the seat belt system, nor does Berkeley suggest that the amount of forward displacement be calculated by the location of a third point. Berkeley only teaches calculation of the tangential velocity of the head, right before impact (see page 2, problem 2, section ii) and, thus, does not meet the burden of In re Mills (emphasis added).

Berkeley teaches the calculation of tangential velocity when time = T_1 and does not teach the calculation of displacement as soon as "said starting position corresponding to a state of said system where any forward displacement at said second point results in said test dummy beginning to tilt about said first point." The Examiner asserts that "this is inherent in Berkeley's disclosed system as the rod is positioned straight vertically." (See *Office Action*, page 9). Indeed, this statement by the Examiner is surely insufficient to demonstrate that one of ordinary skill would have had a reasonable expectation of success in attempting to combine the teaching of Berkeley with the "test dummy beginning to tilt about said first point," as Figure 2 on page 2 illustrates that as $t=T_1$ the rod travels a distance Θ , and "the head hits the dashboard when the torso is at an angle Θ ," (see page one, problem 2). However, the angle Θ is measured from a horizontal plane to the point where the head impacts the dashboard, and does not include a starting position when the rod is straight and begins to tilt.

Further, assuming *arguendo* that Berkeley teaches a three point seatbelt system, Berkeley contains no teaching that would have motivated one of ordinary skill in the art to modify Berkeley to calculate "any forward displacement at said second point [] [when] said test dummy beginning to tilt," as required by claim 17. The Examiner asserts that any forward displacement is inherent in the system (see *Office Action*, page 9). However, as Berkeley does not "suggest the desirability" of calculating any forward-directed displacement as soon as the first point begins to tilt since the angle Θ is measured from where the head impacts the dashboard, Berkeley does not meet the burden required by In re Gordon.

7. Dependent Claims 18 and 19

Application No. 10/666,171

Docket No.: 65858-0024

Applicant's request for support of Official Notice above regarding claims 3, 6, 16 and 17 is repeated with respect to the Official Notice taken with respect to claims 18 and 19.

A. Claim 18

Dependent claim 18 recites:

The system according to claim 17, further comprising an inclinometer mounted at said second point, said inclinometer detecting when said test dummy begins to tilt about said first point, thereby indicating when said test dummy is in said starting position.

In turn, claim 17 recites:

wherein said estimation of said forward displacement occurring at said third point is established with respect to a starting position of said test dummy, said starting position corresponding to a state of said system where any forward displacement at said second point results in said test dummy beginning to tilt about said first point.

In the Office Action, the Examiner asserted that the primary cited reference, Berkeley, teaches all of the limitations of claim 17 with the exception of "an inclinometer mounted at or nearby said second point, said inclinometer detecting when said test dummy begins to tilt about said first point," (*see Office Action, page 9, item 18*). However, Berkeley only teaches measuring velocity of the head, right before impact (*see page 2, problem 2, section ii*) and, thus, does not meet the burden of In re Mills (*emphasis added*).

The Examiner has alleged that to compensate for the acknowledged deficiencies of Berkeley, "it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to use either an inclinometer or an accelerometer." (*Id.*) However, even if the references could be combined, which they cannot, Strand teaches another way of achieving this goal, and thus teaches away from the proposed combination with Berkeley.

Application No. 10/666,171

Docket No.: 65858-0024

Strand teaches that “angular sensing devices are used to measure deflection of the seat 11 when a force is applied from either or both the actuators,” (emphasis added) (*see column 3, lines 19-21*). Strand goes on to teach that “as exemplified, seat deflection is determined by measuring the angular displacement of the backpan 32 and the extension arm 38,” (emphasis added) (*see column 3, lines 22-24*). However, Strand does not measure distances traveled by the “test dummy model [which] is used to investigate head forces at impact,” as taught by Berkeley in problem 2, page 1. Furthermore, Strand is not measuring the amount of “forward displacement occurring at said third point [that] is established with respect to a starting position of said test dummy,” as recited by Applicant in claim 17.

Further, the Examiner provides absolutely no motivation to modify Berkeley with the alleged teachings of Strand and Nagle. Applicant respectfully submits that the alleged motivation to have measured tangent velocity by either the “first method [which] is an accelerometer, and the second method [which] is an inclinometer” (*see Office Action, page 9*), is at best hindsight reasoning. Moreover, the Examiner’s statement of motivation does not explain why one of ordinary skill would have been motivated to replace Berkeley’s implied accelerometer with Strand’s inclinometer. Indeed, Berkeley actually teaches against the proposed combination, as only the velocities at the horizontal, vertical and tangential directions should be calculated, and does not teach a method for calculating distance. The Examiner has shown no reason, and clearly there is none, why one of ordinary skill in the art reading Berkeley and Strand would have thought it desirable to modify Berkeley with the inclinometer command taught by Nagle. Accordingly, withdrawal of the rejection is respectfully requested.

B. Claim 19

The comments made with respect to claim 2 above are equally applicable with respect to claim 19.

Application No. 10/666,171

Docket No.: 65858-0024

CONCLUSION

For the foregoing reasons, all pending claims are believed to be in condition for allowance. If the Examiner disagrees or if the Examiner believes that any formal matters require attention, the Examiner is cordially invited to telephone the undersigned.

Applicant believes that no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. 65858-0024 from which the undersigned is authorized to draw.

Dated: September 25, 2006

Respectfully submitted,

By 

Charles A. Bieneman

Registration No.: 51,472

Michael B. Stewart

Registration No.: 36,018

RADER, FISHMAN & GRAUER PLLC

39533 Woodward Avenue, Suite 140

Bloomfield Hills, Michigan 48304

(248) 594-0600

Attorneys for Applicant